Small Business Innovation Research/Small Business Tech Transfer

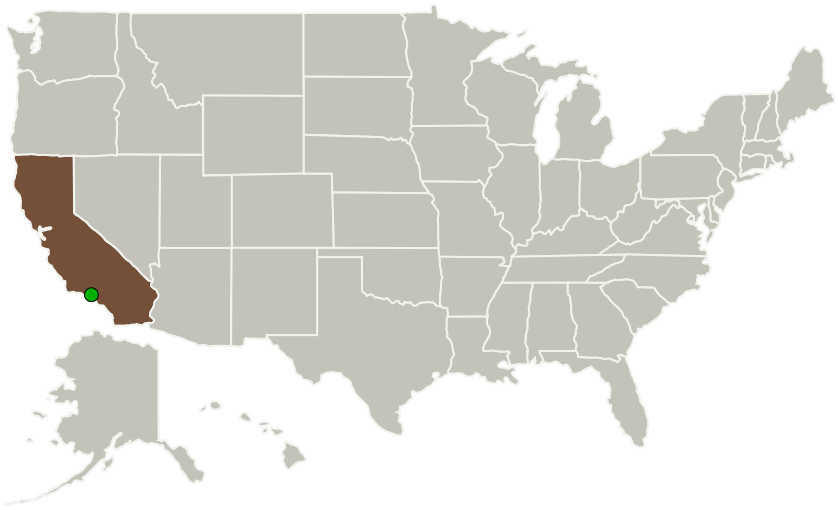
High Efficiency and Power Laser Transmitter for Deep Space Communications, Phase I

Completed Technology Project (2014 - 2014)

Project Introduction

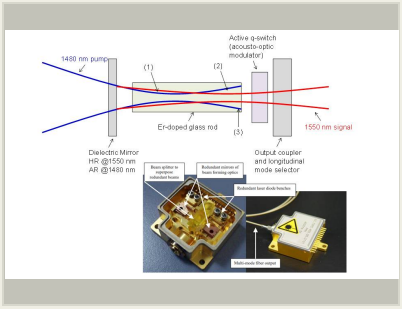
In this program, Freedom Photonics will design an innovative compact, diode laser pumped solid state laser to achieve specifications listed by the program. High efficiency will be achieved by simultaneously optimizing the pump laser and the solid state active region and cavity for high performance.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Freedom Photonics, LLC	Lead Organization	Industry	Santa Barbara, California
Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California

Primary U.S. Work Locations
California



High Efficiency and Power Laser Transmitter for Deep Space Communications Project Image

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Project Transitions

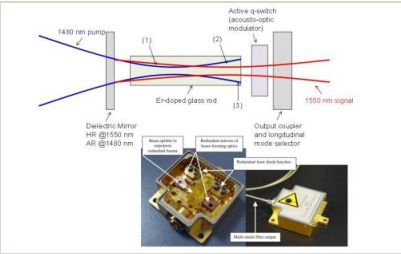
June 2014: Project Start

December 2014: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137594)*

Images



Project Image
High Efficiency and Power Laser Transmitter for Deep Space Communications Project Image *(https://techport.nasa.gov/image/126093)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Freedom Photonics, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

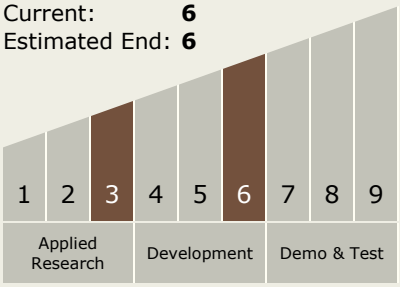
Carlos Torrez

Principal Investigator:

Milan Mashanovitch

Technology Maturity (TRL)

Start: **3**
Current: **6**
Estimated End: **6**



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Technology Areas

Primary:

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - TX05.1 Optical Communications
    - TX05.1.3 Lasers

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System